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# Scaling Science

Understandings and approaches for scaling research impact

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# What is scaling science?

A play on words



<b>Science of scaling</b>	<ul style="list-style-type: none"><li>• Empirical understanding of scaling and how it can increase likelihood that innovations benefit society</li></ul>
Scaling scientific research results	<ul style="list-style-type: none"><li>• Principles-based, practical approach to scaling impacts of research for the public good</li></ul>

## Science of scaling

- Empirical understanding of scaling and how it can increase likelihood that innovations benefit society

## Scaling scientific research results

- Principles-based, practical approach to scaling impacts of research for the public good





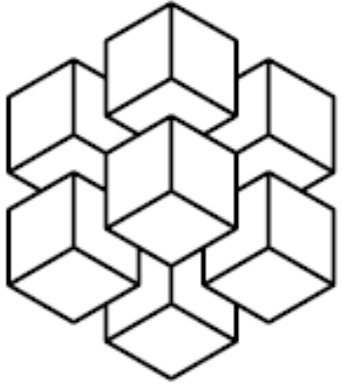
# BASED ON THE WORK OF SOUTHERN INNOVATORS

- Review of ~150 research projects
- In-depth case studies
- Across a range of disciplines

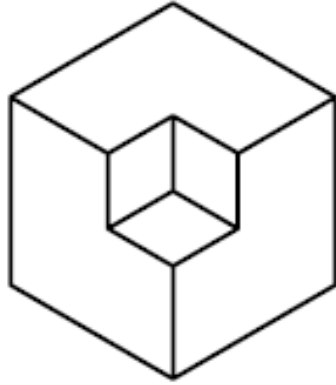




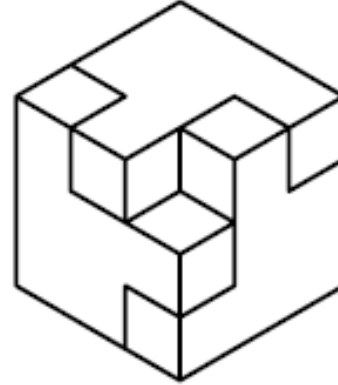
# The science of scaling: A principles-based approach



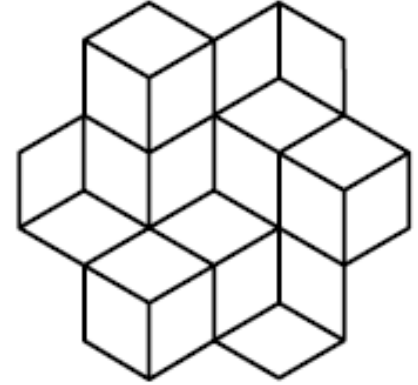
**1. Justification**



**2. Optimal Scale**



**3. Coordination**



**4. Dynamic Evaluation**

«Scaling impact is a coordinated effort to achieve a collection of impacts at optimal scale that is only undertaken if it is both morally justified and warranted by the dynamic evaluation of evidence.»



# CASE STUDY

## 11 SCALING A NUTRITION INTERVENTION ON THE MARKET

Promoting locally fortified sunflower  
oil using e-vouchers

Small and medium enterprises (SMEs) have demon-  
strated the first time—that unrefined sunflower oil  
can be produced on a small scale and reach the most vulner-  
able, particularly lactating mothers and children.  
The MASAVA-fortified oil was pro-  
duced by a network of 319 retailers.  
The project supports  
this policy, which is  
The results  
are at

Scaling on the market 157

increase health risks associated with diseases such as diar-  
rhea and measles. The deficiency is particularly common in  
Tanzania and, in response, the Government announced a  
strategy for increasing the consumption of micronutrient-  
enriched foods.

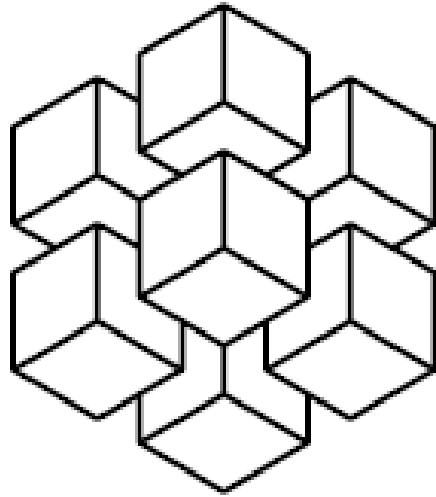
Unrefined or crude vitamin A fortified sunflower oil has  
been unavailable in Tanzania due to a lack of regulatory  
approval. The “Promoting Locally Fortified Sunflower Oil  
Using E-vouchers” project worked with small and medium  
enterprises (SMEs) to demonstrate the viability of the sun-  
flower oil fortification process. The project also sought  
regulatory approval for the production, distribution, and  
sale of fortified sunflower oil in Tanzania. By setting the  
stage for the commercialisation of vitamin A enriched  
sunflower oil, the project’s ultimate goal was to address  
vitamin A deficiency across Tanzania.

While still in its early stages, this project illustrates an  
important pathway to scaling development impact. It shows  
how commercialisation may achieve a specific develop-  
ment outcome: the prevention of micronutrient deficiency.  
Moreover, this outcome is pursued in the context of regu-  
latory constraints, demand management challenges, and  
competition from larger producers. The adoption of vita-  
min A fortified oil in the project’s target regions is a major  
achievement and shows potential for scaling on a national  
level. It also demonstrates a pathway to scale that does not  
require ongoing and indefinite intervention to maintain or  
expand effectiveness.

deficiency and unrefined oil

nutrient that is essential to healthy  
sustained adult health. Individuals  
often fail to achieve adequate



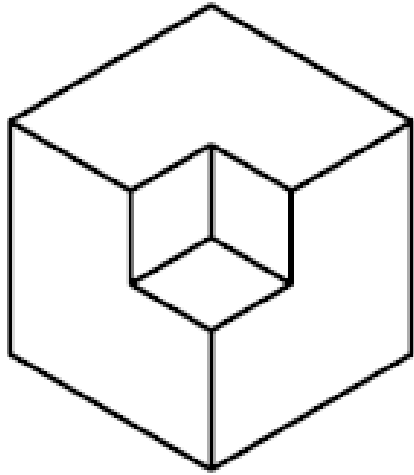


## 1. Justification

- The **choice** to scale must be justified
- Based on a balance of **evidence** and **values**
- Choice must be **shared**



- Technical study showing shelf stability of fortified, unrefined oil
- Addressing a widely identified health risk and complementing government policy
- Clear local economic benefit



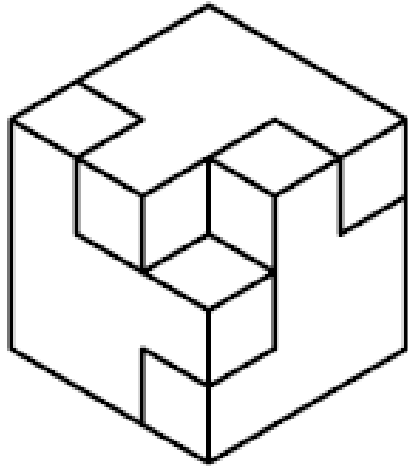
## 2. Optimal Scale

- More is **not** necessarily better
- Scaling produces a **collection of impacts**
- Balance **magnitude, variety, equity, sustainability**





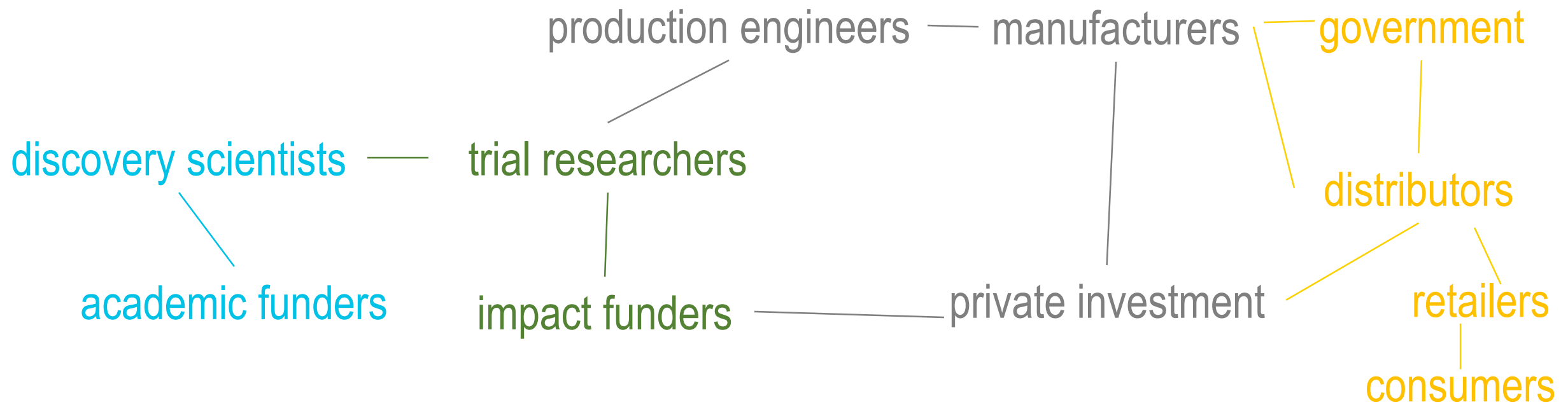
- Increases in vitamin A levels in the target regions (magnitude)
- Ability of enterprises to meet demand in the regions (variety)
- Cost effectiveness of production (sustainability)
- Assessment of benefits for lowest-income households (equity)



### 3. Coordination

- Scaling occurs in **complex systems**
- Requires a **flexible** scaling process
- Coordination connects an **evolving set of actors**

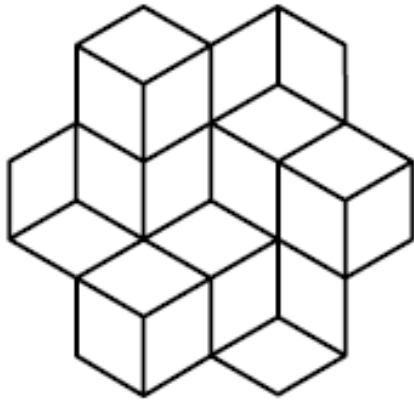




Discovery

Optimal Scale





#### 4. Dynamic Evaluation

- Scaling is an intervention that **can be evaluated**
- Generates **dynamic change**
- Measure a **collection of impacts**, not just impact at a particular level or scale





- Nutritional monitoring
- Effectiveness of the commercial approach
- Consideration of packaging and volumes



How to apply these principles in R4D?



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# The Scaling Playbook

A Practical Guide  
for Researchers



- **Guidance** for researchers interested in scaling to incorporate these principles throughout a research project
- **Continued learning** about scaling for impact through new applications and case studies

[www.idrc.ca/en/research-in-action/scaling-science](http://www.idrc.ca/en/research-in-action/scaling-science)



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